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Predictors of reading success for 188 Negro and white upper- and lower-class children in eight schools of two adjoining Southern rural counties were determined. The Children's Self-Social Constructs Test provided measures of such areas as self-esteem, social dependency, and minority identification. Teachers rated each child on 24 kinds of behavior, and the Metropolitan Readiness Test, the Otis Quick-Scoring Mental Ability Tests, and the Metropolitan Reading Test were administered. Negro and white children differed significantly in all measures of achievement and intelligence. Significantly more white children were promoted to grade 2, and among those promoted, white children were significantly higher on total reading and IQ. When IQ was statistically controlled, Negro and white children differed significantly in reading. For white children teacher rating, readiness, and IQ were about equally good predictors of total reading achievement. For Negro boys teacher ratings were the best predictors of reading success; IQ as a predictor was considerably lower. For Negro boys and girls low negative relations were found between achievement and both readiness and kindergarten attendance. References are included. (CM)

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# Predictors of Success in Beginning Reading Among Negroes and Whites

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McNemar in his presidential address to the American Psychological Association in September 1964, reasserted the strength and importance of the concept of general intelligence. More recently Jenson, in a much discussed article in the Harvard Educational Review, has summarized the research supporting the heredita-bility of general intelligence and has called to the attention of educators the validity of intelligence tests and their relevance as predictors of academic success. Louise Bates Ames (1968) recently asserted a similar position declaring specifically that low intelligence is a prominent and often unrecognized explanation for low achievement in reading.

The further assertions by Jenson that lower intelligence is a characteristic of children of lower socio-economic status and that social isolation may lead to a deterioration of intelligence for a minority group have led to a violent reaction by environmentalists who would claim a far greater importance for social influences.

Regardless of the theoretical and practical differences between these two camps, it would seem necessary that educators give close attention to some of the major implications that follow from the Jenson, McNemar, Ames position. The first of these is the importance they attribute to the establishment of equal educational and vocational opportunities for all members of our society. The second is that educational techniques, which have traditionally been attuned to the 100+IQ, white, middle-class child will require change if they are to be useful for the total population of students. Third, the redesigned curriculum must concentrate less upon immediate compensatory goals and more upon long-range

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developmental programs individuated for all groups. Finally, educators must study intensely academic achievement which, to a far greater degree than intelligence, is subject to social and educational influence.

Perhaps the most prominent academic deficiency among lower-class school children is their failure to learn to read in first grade. Moreover, this early failure all too often predicts later failure and eventual discontinuance of education altogether. A fair proportion of our lower-class students never attain literacy and the learning difficulty of the lower class, particularly the Negro child, is one of our most pressing educational problems.

For this reason it would seem necessary to re-examine the common predictors of success in beginning reading for children of varying backgrounds, and to extend this investigation to other possible correlates. Such has been the purpose of this study. It was believed that an investigation of personal, social, and academic characteristics of children who succeeded in learning to read would promote a better understanding of educational strategies for first-grade teaching.

## Method

Subjects. Subjects consisted of 192 children; half white, half Negro; half boys, half girls; half "higher" class, half "lower"; average age 78.1 months at the beginning of the study, who entered first grade in eight schools in two adjoining rural Southern counties. Before the sample was selected, information about race, sex, and guardian's occupation was collected for all children registered to enter first grade. Hollingshead's Occupational Scale was used to categorize the children roughly by class, with levels six and seven (semi-skilled and unskilled laborers) constituting the "lower" class, and levels one through five, the "higher" class. The schools were in the initial stages of desegregation and varied widely in racial composition. Four subjects were lost from the original sample due to withdrawal from school, leaving an N of 188.

Procedure. Within one week of school entrance, all Ss were tested with the Children's Self-Social Constructs Test (CSSCT) (preschool form) by six female Es. The CSSCT is a paper and pencil, nonverbal instrument providing measures of (a) self esteem, (b) social dependency, (c) identification with and preference for mother, father, teacher, and friend, (d) realism as to size, and (e) minority identification. The test is administered individually; all directions are oral and all responses nonverbal. The child selects a symbol (circle) to represent the self from among those presented to him, or pastes a gummed circle (representing the self) on the page in relation to symbols representing others. It is assumed that the child can express his self-social concepts symbolically, using common symbolic meanings.

Esteem is indicated by selection of a circle to represent the self higher rather than lower in a column of circles. Social dependency is measured by placement of a gummed circle representing the self within, rather than without, a group of circles representing others; identification with mother, father, teacher and friend, by a circle nearer rather than further from a symbol representing the other; preference for these persons, by placing the "self" circle near a symbol representing the other person (forced choice); realism by the selection of a smaller, rather than a larger, circle from an array of circles; and minority identification by the selection of a shaded circle, rather than a plain one, after viewing an array of circles, the majority of which are plain. Except for the forced choice items (preference) all tasks are presented from two to four times, and scores summed. Split-half reliabilities, corrected for length, ranged from .48 to .85 with a median of .73. Evidence for construct validity is summarized elsewhere (Long & Henderson 1967, 1968).

After the first six weeks of school, teachers rated each child on 24 kinds of classroom behavior thought related to good school adjustment. These ratings were summed (split-half reliability for summed score = .95) for certain analyses, but analysed separately for others. Information about families, preschool attendance, and the results of the fall testing with the Metropolitan Readiness Test were obtained from schools. In the spring, Otis Quick-Scoring Mental Ability tests were administered to all subjects by the experimenters. During the first few months of the next school year, the Metropolitan Reading Test was administered to those subjects (145) who had been promoted to the second grade. It was assumed that those children not promoted were unable to read.

## Results

Results will be presented first in terms of differences in achievement for the two races and next for the correlates of achievement for each race. All findings reported are significant at the .05 level or above with a two-tailed test.

At the end of the first grade, 84% of the white children were promoted to the second grade and 71% of the Negroes, a significant difference. Among those promoted, white children were significantly higher on total reading and on IQ. Further, 43% of the promoted Negro sample achieved reading scores at a "chance" level or below in contrast to only 18% of the whites, again a significant difference. Finally, Negro and white children differed significantly in reading with IQ controlled statistically.

Because of the substantial and significant differences in achievement between the two races, it was decided to analyze other variables in relation to achievement for the two races separately.

For white children, three measures were found to be about equally good predictors of total reading achievement; teacher rating .45, readiness .46, and IQ .41. Age was positively correlated with achievement ($r = .22$) and this effect

was due largely to the boys (r = .41) as opposed to (r = .11) for the girls only. These four variables produced a multiple R with achievement of .63. No significant correlations were found for kindergarten attendance, presence of father in the home, or number of siblings. Correlates with self-social variables differed for the two sexes. Achieving girls were significantly further from father (r = .47) and boys had higher esteem, particularly with IQ controlled (r = .37).

Among the Negroes, teacher ratings correlated significantly with reading achievement (r = .33) and this finding appeared attributable to the boys (r = .50) and not to girls (r = .15). A somewhat less strong relationship to achievement was found to IQ for this group (r = .26). Low negative relations, of borderline significance, were found between achievement, and both readiness and kindergarten attendance (r = -.18 and -.20). No significant family correlates were found for the Negroes though there was a trend for Negro boys in terms of father presence and fewer sisters in the home (.10). These trends also occurred for white boys with the consequence that father presence and fewer sisters in the home did attain significant levels with all boys combined. As with the white subjects, the sexes differed among the Negro sample for self-social correlates. Achieving girls were further from mother and, chose to place the self with mother less, and friend more. With Negro and white girls combined, achievement was associated with greater distance from mother and father.

## Discussion

In this study, Negro and white children differed significantly in all measures of achievement and in intelligence. This finding is in keeping with a wide variety of studies in which high and low class and/or Negro and white comparisons have been made. On the other hand, the difference in achievement between the two groups is out of proportion with the difference of capacity and suggests that the schools are failing with the black children even in grade one. Such a

finding is inconsistent with our declared belief in equal educational opportunity and suggests the need for improved teaching effectiveness.

For the white children, a familiar array of variables predicts success in learning to read: IQ, readiness tests, teacher ratings, and age. Higher esteem in the boys and separation from parents for the girls were also related to success. The latter pattern, which suggests a mature independence, was also found for the Negro girls. Combining the Negro and white boys, father presence and fewer sisters, were also related to reading success. This set of findings suggests that the amount of adult attention may be of consequence for achievement with boys.

Among the predictors of reading success for the black children perhaps the most interesting are the low (.26) correlation between IQ and reading and the negative correlations for kindergarten attendance and standardized readiness tests among those who were promoted. This set of findings suggests the probable "hot house" effect of Head Start which was related to achievement on readiness tests but failed ultimately to maintain its relationship to achievement by the end of the first grade year. These findings suggest the lower utility of standardized tests as predictors of achievement for the Negro sample. And the greater usefulness of teacher ratings, particularly for the Negro boy. This finding emphasizes the need for trained teachers who are capable of exercising judgment in the classroom as they work with these beginning pupils.

Relations between achievement and the self-social measures were different among the various groups and relatively few in number. Because the initial analysis did not take into account the 43 subjects who were not promoted, a second, more detailed analysis was made of the self-social variables. For these analyses, which were done separately for the two races, each group was divided into three parts--those who failed, those who were promoted but could not read, and those who succeeded in learning to read.

Time does not permit a detailed presentation of the findings of these analyses, but they will be considered briefly along with some tentative conclusions. First, it should be noted that over-all findings exceeded those expected by "chance". Patterns within each race were not identical, although a number of similarities appeared. The results, in general, appear to be most readily interpretable for the Negro children where numbers in each cell were roughly comparable.

Among the Negroes, the three groups had about the same incidence of father absence but differed somewhat in socio-economic class with higher class favoring achievement. Number of siblings was higher for the repeaters than for the other two groups. The three groups differed significantly from each other in both IQ and teacher ratings. The rating items that showed a regular increase over the three groups with significant difference between each pair included: (1) follows directions, (2) works independently of teacher, (3) contributes to discussion, and (4) explores experiences eagerly.

The findings and interpretations for each group are as follows:

The repeaters, some of whom were placed in "readiness" classes where little formal instruction in reading was given, differed from the promoted non-readers on the following additional items from the rating scale: (1) shy with teacher, (2) does not obey rules, (3) avoids leadership, (4) unable to play in group, and (5) does not talk to other children. These children tended (.10) to be low in esteem and unrealistic in the size items. They differentiated relatively little among the stimulus persons in the preference items. The girls showed high minority identification and preferred teacher to mother. The repeaters in the identification and dependence items were relatively distant from others, particularly parents. Since they are described as shy, unable to follow rules, or to play with others, this greater social distance may express a hostile or

frightened withdrawal, rather than a comfortable independence. If so, such an alienation may explain their poor performance on IQ and readiness tests.

The promoted non-readers, who were moderate in IQ and ratings, lower in social class, but higher in readiness scores than the readers, tended to be closer to mother and father and to others in general than were the other two groups. The behavior scales which differentiate them significantly from the readers, in addition to the four mentioned above, included (1) overly dependent on teacher, (2) clings to familiar, (3) demands attention, (4) inattentive and (5) does not complete tasks. The boys were higher in esteem, the girls less teacher-oriented than those in either other group. The emerging picture of this group is one of an immature, overly-dependent child, similar in a number of respects to a group of children with reading problems in an earlier study (Henderson, Long, & Ziller, 1965), and bearing some resemblance to Ausubel's description of the "satellite".

The readers were higher than the other two groups in IQ scores and ratings. They placed themselves further from parents and the group than the promoted non-readers, and were rated significantly higher than either other group on 14 of the 24 ratings; including "independence" and "exploring". The girls chose the majority "white" symbol to represent the self, and preferred teacher to mother. Both boys and girls tended to select the small realistic symbol for the self, and to differentiate between people, preferring mother, teacher, and friend to father. These children thus appear to have begun the desatellization process described by Ausubel and to be confident enough to move away from their parents as they enter school.

Correlations of predictor variables to total reading scores.

| Variables | Samples | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | Whites | Negroes | Boys | Girls | W.Boys | W.Girls | N.Boys | N.Girls |
| N | 145 | 77 | 68 | 66 | 79 | 36 | 41 | 30 | 38 |
| IQ | .38 | .41 | .26 | .36 | .39 | .36 | .45 | .27 | .22 |
| Rating | .39 | .45 | .33 | .47 | .31 | .54 | .39 | .50 | .15 |
| Readiness | .24 | .46 | -.18 | .29 | .20 | .42 | .52 | -.08 | -.22 |
| K | .08 | .18 | -.20 | .05 | .11 | .18 | .18 | -.27 | -.11 |
| Age | .14 | .22 | -.00 | .20 | .08 | .41 | .11 | -.09 | .04 |
| Father | .21 | .10 | .17 | .31 | .11 | .13 | .09 | .29 | .04 |
| #Sisters | -.19 | -.15 | -.19 | -.29 | -.11 | -.22 | -.11 | -.32 | -.06 |

Among Negroes K and readiness +.39; both negative related reading (-.20;-.18)

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